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SUMMARY OF FEDERAL WATER POLLUTION CONTROL ADMINISTRATION PROGRAMS IN CALIFORNIA

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
SAN FRANCISCO, CALIFORNIA

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SUMMARY OF FEDERAL WATER POLLUTION CONTROL ADMINISTRATION PROGRAMS IN CALIFORNIA

Prepared by

Southwest Regional Office
Federal Water Pollution Control Administration
U. S. Department of Interior

For Presentation To

Natural Resources and Power Subcommittee

of the

Committee on Government Operations

House of Representatives

Congress of the United States

May 19, 1967

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INTRODUCTION

The following report was prepared by the Southwest Regional Office, Federal Water Pollution Control Administration, for submission to the Natural Resources and Power Subcommittee of the Committee on Government Operations, House of Representatives, Congress of the United States, at its May 19th, 1967 hearing held in Sacramento, California.

The report briefly outlines the activities of the Federal Water Pollution Control Administration that are under way in, or are important to, the State of California. Emphasis has been placed on the programs that are of importance to the portion of the State lying north of the Tehachapi Mountains.

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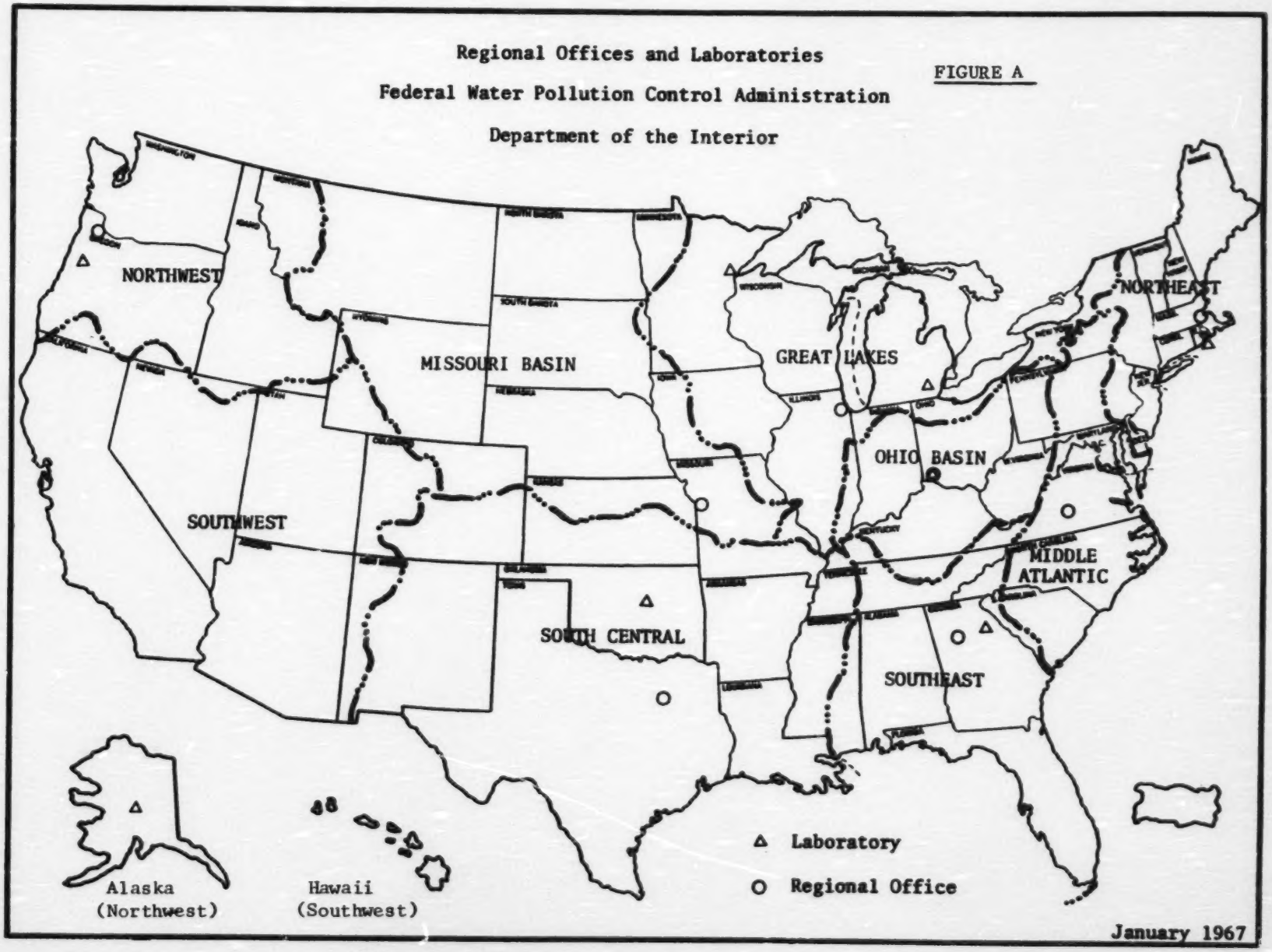

Regional Offices and Laboratories
Federal Water Pollution Control Administration
Department of the Interior
FIGURE A
NORTHWEST
MISSOURI BASIN
GREAT LAKES
NORTHEAST
OHIO BASIN
SOUTHWEST
MIDDLE ATLANTIC
SOUTH CENTRAL
SOUTHEAST
Alaska
(Northwest)
Hawaii
(Southwest)
Laboratory
Regional Office
January 1967

SOUTHWEST REGION
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

I. COMPREHENSIVE PLANNING AND PROGRAMS

An objective of this activity is the development and implementation of comprehensive programs for water pollution control in each of the river basins of the region. These efforts can be directed by either the State or interstate water pollution control agencies involved, or by the Administration, but in either case, with the full participation and cooperation of all responsible agencies. (Figure B)

The 1956 Federal Water Pollution Control Act in Section 3(a) calls for the development of such programs in the major interstate river basins of the nation. In accordance with these provisions the Central Pacific Basins Comprehensive Water Pollution Control Project was initiated in Fiscal Year 1966. The Central Pacific Basins are those that drain to the Pacific Ocean from the Mexican border on the south to the California-Oregon border on the north. Most of the State of California, therefore, is included within the project's boundaries. During the first year and a half of its existence major project efforts were directed toward the evaluation of the effects of the proposed State-Federal San Joaquin Master Drain on the water quality of the San Francisco Bay and Delta. This intensive investigation has been completed and a report prepared that is now available for distribution. In essence, it was found that pollution can be avoided by adoption of certain pollution control measures. Without such measures losses would become significant by 1980 or possibly as early as 1974 when the Peripheral Canal is scheduled to go into operation. Following up on the study and report, FWPCA, the U.S. Bureau of Reclamation, the Office of Saline Water, and the California Department of Water Resources, have undertaken a cooperative investigation to determine the most feasible method of treatment. (Figure C)

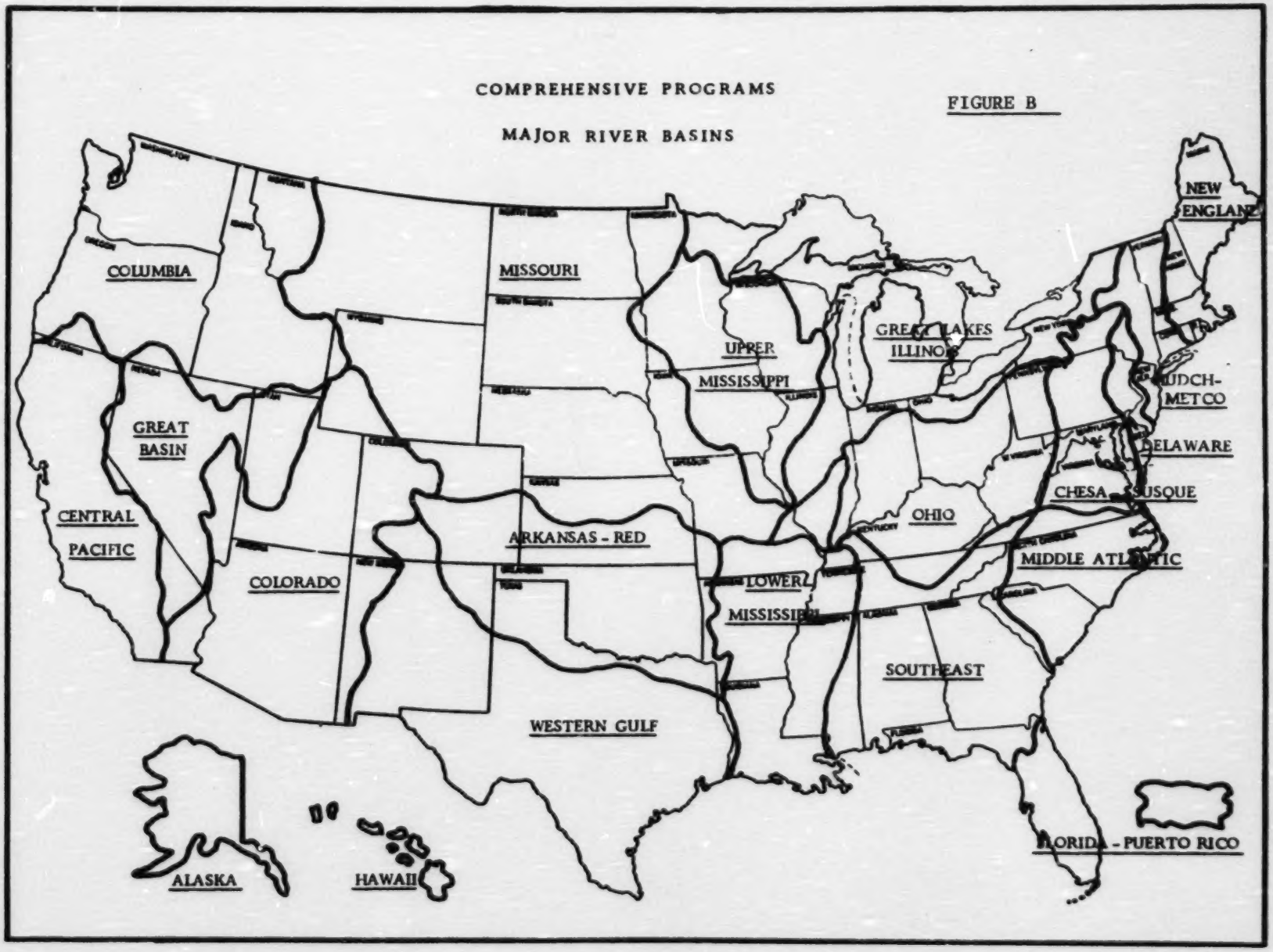
This San Joaquin Investigation represented a good first step toward development of a comprehensive program for the Central Pacific Basins. Following up on this work the Project will direct its efforts to development of a Comprehensive Program for the Central Valley of California.

This effort will parallel and supplement the State Water Quality Control Board's Bay-Delta program. This State project exemplifies the type of comprehensive planning activity that Section 3(c) of the Federal Water Pollution Control Act is intended to stimulate. This provision of the Act which was added by the Clean Water Restoration Act of 1966, provides for up to 50% grants for up to three years to agencies engaged in the development of comprehensive water pollution control programs for

COMPREHENSIVE PROGRAMS

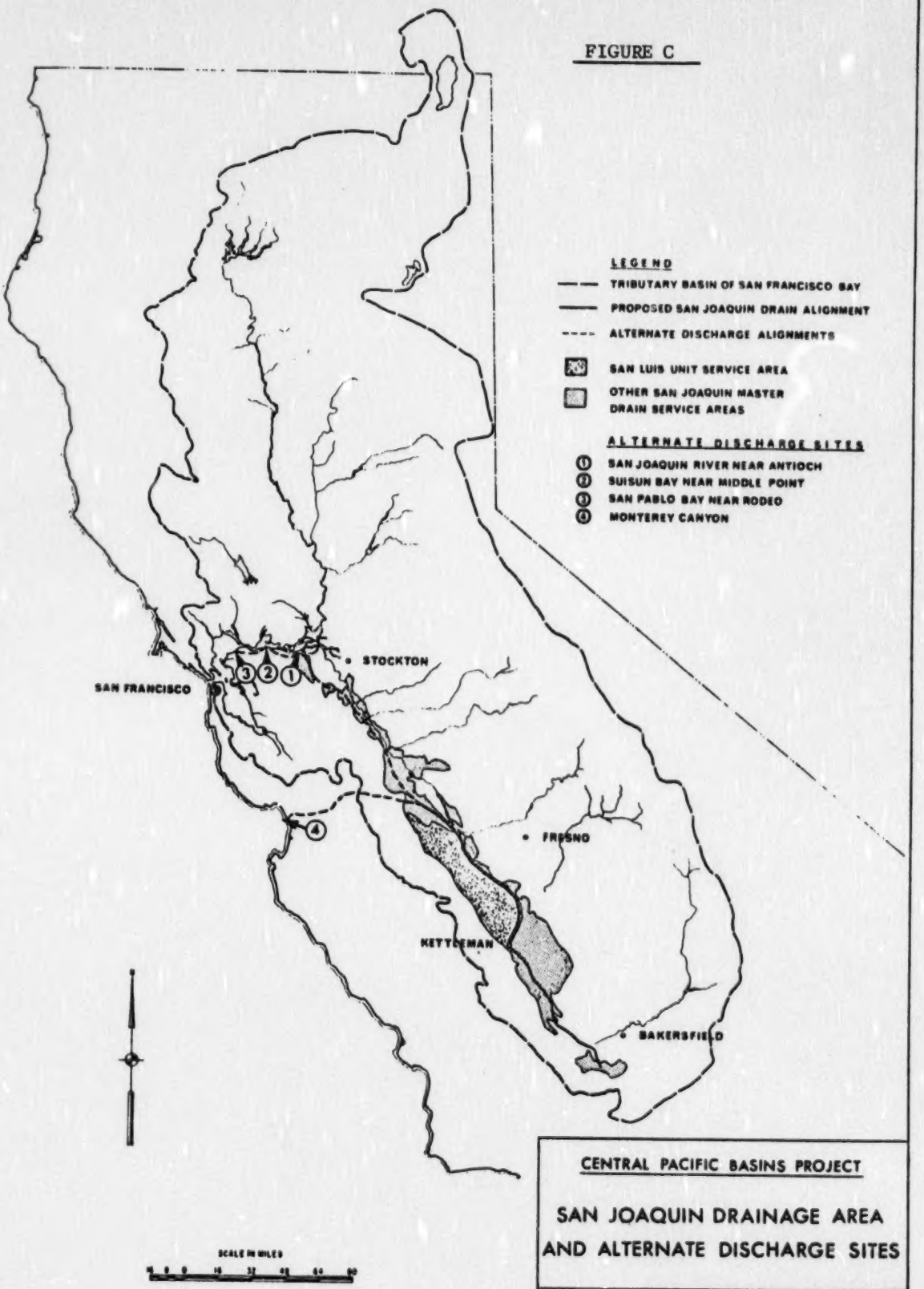
MAJOR RIVER BASINS

FIGURE B



1A

FIGURE C



CENTRAL PACIFIC BASINS PROJECT

SAN JOAQUIN DRAINAGE AREA AND ALTERNATE DISCHARGE SITES

U.S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
SOUTHWEST REGION — SAN FRANCISCO, CALIFORNIA

river basin. It is anticipated that some funds will become available during the next fiscal year and this provision of the Act may well open the way for a significant contribution in the future to effective planning by local, State, and interstate agencies for pollution control in California.

The program of grants to state and interstate water pollution control agencies to expand and improve the effectiveness of their activities has now been in existence for ten years. The authorized annual expenditure for this program was recently doubled by Congress and the Federal Water Pollution Control Administration will be examining these grant applications more carefully than ever before. To assist the states in describing their current and proposed program activities and to demonstrate the improvements to be achieved by the grant funds, the Administration has recently developed a set of guidelines for preparation of the grant applications. The key requirement that must be satisfied is the program plan that describes each major facet of the agencies' program, areas of deficiency and their plans for overcoming those deficiencies through the use of grant funds. We anticipate that in this way the increased level of support of state and interstate programs that Congress has authorized will produce maximum benefits in the control of pollution.

The Administration has become increasingly involved in the water quality aspects of Federal water resource development planning in California. The necessity for the inclusion of storage in proposed Federal reservoirs for streamflow regulation for quality control has been examined in 15 instances in California during the past five years. In only one case, however, that of the New Melones Project, a joint Corps of Engineers-Bureau of Reclamation Project on the Stanislaus River, was it found that such storage could be justified. As the many additional proposed Federal water resource development projects in California reach the detailed planning stage, we will continue to evaluate storage needs for quality control.

Certain Federal projects are also examined for their potential impact on water quality as required by Section 6 of Executive Order 11288. Evaluation reports are routinely prepared for the Federal construction agencies on all types of water resource development projects such as the previously mentioned San Joaquin Master Drain and the Delta Peripheral Canal, which have the potential for influencing water quality substantially. The water quality benefits and/or detriments of such projects are identified and expressed where possible in economic terms. We expect these efforts to be of significant assistance in the maintenance and enhancement of water quality in California in the future.

We have just recently become engaged in another significant effort in planning for water quality control in California. The FWPCA is a participant in the State-Federal interagency Type I Comprehensive Framework Study for the California Region as called for in the Water Resources Planning Act. This study, one of four that will be under way simultaneously in the four hydrographic regions of the Pacific Southwest area, will consider the best use of water and related land resources to meet foreseeable short and long-term needs. Water quality as well as quantity requirements will be given careful consideration in this study, which is scheduled for completion in Fiscal Yaer 1971.

II. TECHNICAL PROGRAMS

The Technical Programs of the Southwest Region, FWPCA, comprise two major activities:

1. Technical services - provides technical assistance on pollution problems and their solution to other FWPCA units and, on request, to other Federal, State, and local agencies, industries and individuals.

2. Pollution Surveillance - plans, develops and coordinates programs for the collection, evaluation, and dissemination of water quality data and related water pollution information.

TECHNICAL SERVICES

At present, the Region is concerned with the following Technical Services activities:

San Joaquin Valley Drain Studies

An investigation of the "Effects of the San Joaquin Valley Master Drain on Water Quality of the San Francisco Bay and Delta" was completed by the Region's Comprehensive Programs, January 1967. This investigation has shown that high concentrations of nitrate-nitrogen in the drainage waters will result in damage to the fishery and recreation values of San Francisco Bay and Delta waters if the drain discharge takes places as currently planned. As a result of this FWPCA study, further cooperative investigations are under way to verify the drain water quality, examine alternative treatment methods, and develop treatment costs for removal of nitrogen. These studies will be conducted jointly by FWPCA, U.S. Bureau of Reclamation, Office of Saline Water and the California Department of Water Resources. FWPCA cooperation originates from two programs, i.e., Research and Development, and Technical Programs. (Figure C)

Through its Research and Development Program, FWPCA will evaluate treatment methods including algae production and harvesting processes, denitrification processes, and desalination processes (reverse osmosis and electrodialysis). This activity will be conducted in the San Joaquin Valley near Firebaugh, California. The FWPCA Water Research Laboratory at Ada, Oklahoma will provide personnel, equipment, and administrative support.

Through its Technical Program FWPCA will participate in studies to define the probable character of the drainage waters to be treated. These studies will be conducted in the San Joaquin Valley and Imperial Valley of California. The Regional Office will provide the personnel, technical and administrative support for this activity in cooperation with the California Department of Water Resources and the U.S. Bureau of Reclamation.

Klamath Basin Project

The study area is located in the upper Klamath River Basin along the California-Oregon border and encompasses one of the largest wildlife refuges and one of the most productive potato growing regions in the United States.

Studies were initiated in 1964 to investigate two recurring pollutions problems. (1) wildfowl mortalities in game refuges adjacent to areas of intensive agricultural use in the Lost River System which is tributary to the Klamath River, and (2) extensive algal blooms in Klamath Lake and upper reaches of the Klamath River. (Figure D)

The Technical Services Program of the Southwest Regional Office has responsibility for investigations related to pollution problems in the Lost River system. The Research and Development Program of the FWPCA Water Laboratory at Corvallis, Oregon is conducting investigations related to the algae problem.

A Technical Services project office has been established in Klamath Falls, Oregon to conduct field and laboratory effort necessary to accomplish the following objectives related to problems in the Lost River system:

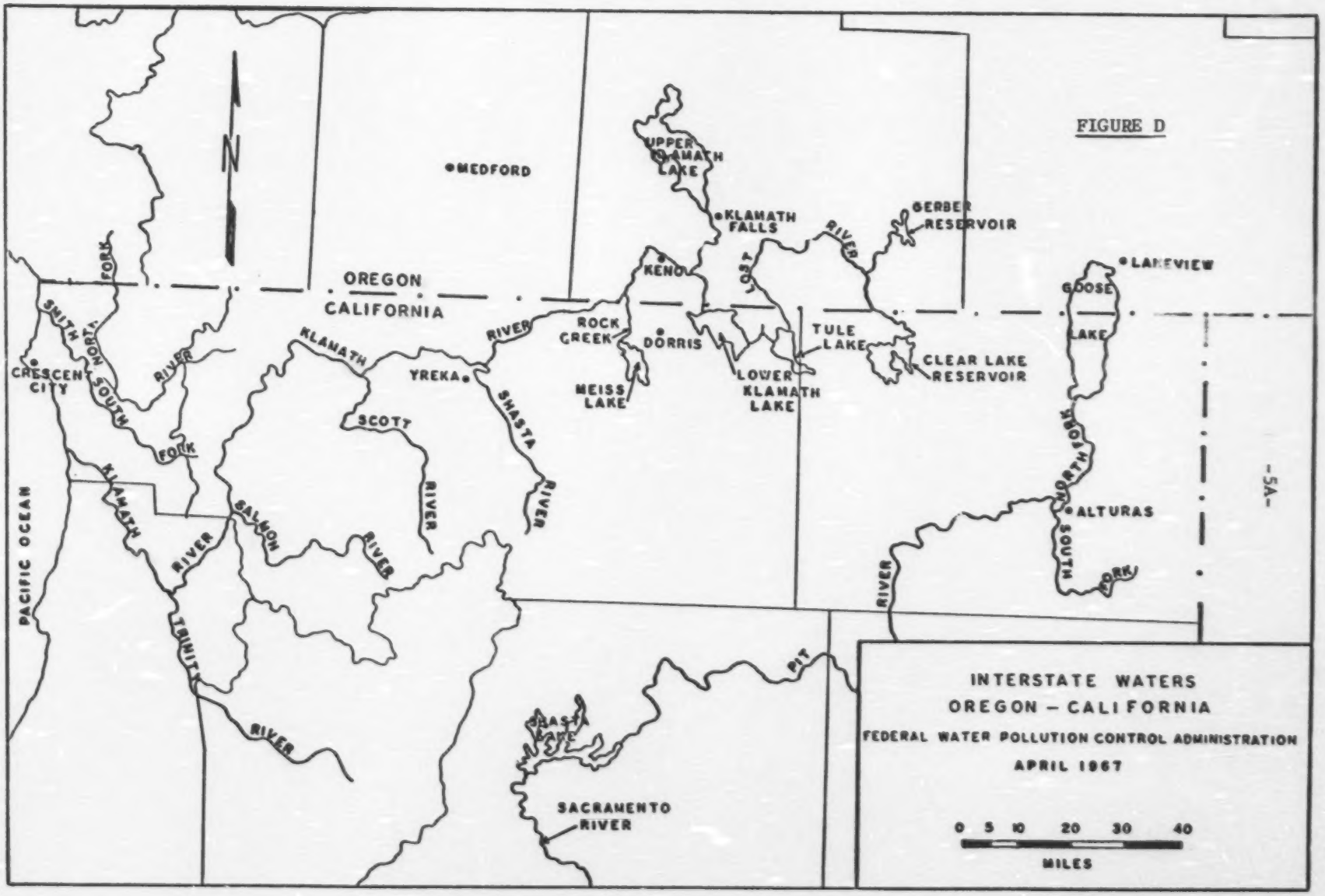
1. Measure and identify pollutants responsible for wildlife and fish mortalities and dermatitis in the human population.

2. Determine the relationship between land use and pollutants (pesticides, mineral matter, nutrients) and the prevention of wildlife kills.

3. Determine the role, if any, which irrigation water application practices have in increasing or reducing pollutants in surface waters.

4. Determine the effects of nutrients originating from agricultural land drainage upon recreation, water supply, and Federal wetlands and wildlife management areas.

FIGURE D


N
MEDFORD
UPPER KLAMATH LAKE
KLAMATH FALLS
GERBER RESERVOIR
LOST RIVER
KENO
LAKEVIEW
GOOSE LAKE
OREGON
CALIFORNIA
ROCK CREEK
DORRIS
TULE LAKE
CLEAR LAKE RESERVOIR
LOWER KLAMATH LAKE
MEISS LAKE
KLAMATH RIVER
YREKA
SHASTA RIVER
SCOTT RIVER
SMITH RIVER NORTH FORK
SMITH RIVER SOUTH FORK
CRESCENT CITY
PACIFIC OCEAN
KLAMATH RIVER
SALMON RIVER
TRINITY RIVER
PIT RIVER
ALTURAS
SOUTH FORK
SACRAMENTO RIVER
INTERSTATE WATERS
OREGON – CALIFORNIA
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
APRIL 1967
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MILES

5. Recommend and approve practices to control or eliminate the damaging effects upon water or present agricultural practices, and Federal wetlands and wildlife management programs.

Proposed efforts to date have been mainly directed to the studies of the pesticide problem and the development of a mathematical model which will assist in evaluating water use practices and their effects on water quality.

Completion of this investigation is scheduled for Fiscal Year 1969.

Industrial Tax Credit Activities

Technical Services has Regional responsibility for certification of industrial waste treatment facilities for investment tax credit as authorized by PL 89-800 of 1966. Proposed regulations applicable to this activity have been printed in the Federal Register, Vol. 32, No. 21, February 1, 1967. To date, the Regional Office has not received an application for certification although several inquiries have been received.

Oil Pollution Act Activities

Administration of the Oil Pollution Act of 1924 was transferred to the Secretary of the Interior as a result of the Clean Water Restoration Act of 1966 and delegated to FWPCA in January 1967. Guidelines have been prepared which define interim procedures to be followed by the Regional Office until FWPCA can develop its own capabilities. Cooperative procedures will be followed during the interim period to assure a total program by the FWPCA, Corps of Engineers, and the Coast Guard in the enforcement of the Oil Pollution Act. Appropriate offices of the Corps of Engineers and the Coast Guard within the Southwest Region have been contacted on this matter.

POLLUTION SURVEILLANCE

Pollution Surveillance activities of the Southwest Region include the collection, analysis,interpretation, documentation and dissemination of data on water quality, water supply, and waste treatment. At present, 15 monitoring stations for pollution surveillance have been established on rivers and streams within the Southwest Region. Four of these are located on interstate waters of California. Analysis of samples collected at these stations is conducted by the California Department of Water

Resources, the FWPCA Colorado River Basins Project Laboratory at Salt Lake City, and the Robert A. Taft Water Quality Laboratory Laboratory at Cincinnati.

The primary effort of the Region at present is to accelerate the transition of pollution surveillance monitoring to an automated system. This will be integrated with the STORET computer system for automatic storage and retrieval of data for water quality control. Full automation will greatly enhance FWPCA'a ability to assist the States in their compliance with the Federal Water Pollution Control Act, as amended in 1965.

III. FACILITIES PROGRAMS

CONSTRUCTION GRANTS

Since the beginning of the Construction Grant program in 1956, under the Federal Water Pollution Control Act (33 U.S.C., 466 et seq.) the Southwest Regional Office, Federal Water Pollution Control Administration, has awarded 264 grants to applicants in the State of California. These grants amounted to $48,272,583 out of a total project cost of $268,278,086. The attached map (Figure 1) indicates the number of projects awarded in each of the nine water quality control regions of the State.

Water quality requirements set forth in current Federal Water Pollution Control Administration activities in water quality standards, immediate water pollution control needs reports, and river basin comprehensive projects, will set the stage for the future review and approval of applications for grants in the construction of water pollution control facilities. The Construction Grants program will be completely integrated with all other Regional activities to insure a maximum return for program funds.

FEDERAL ACTIVITIES COORDINATION

In administering Executive Order 11288, "Prevention, Control and Abatement of Water Pollution by Federal Activities," July 2, 1966, the Federal Activities Coordination program has assigned priority listings to sixteen water pollution control projects in the State of California for the period through FY 1969. Fiscal year and the estimated cost of the projects is indicated in the table below.

Fiscal Year	Projects	Estimated Cost
1967	1	$ 422,000
1968	8	1,613,000
1969	7	6,657,000
	16	$8,692,000

The attached table (Table 1) indicates individual projects, recommended priorities in relation to the total projects for the Southwest Region, and the status of these projects as of May 1967.

Federal Activities Coordination has been actively engaged in working out suitable water pollution control requirements for dredging projects with the Corps of Engineers. An action program is under way

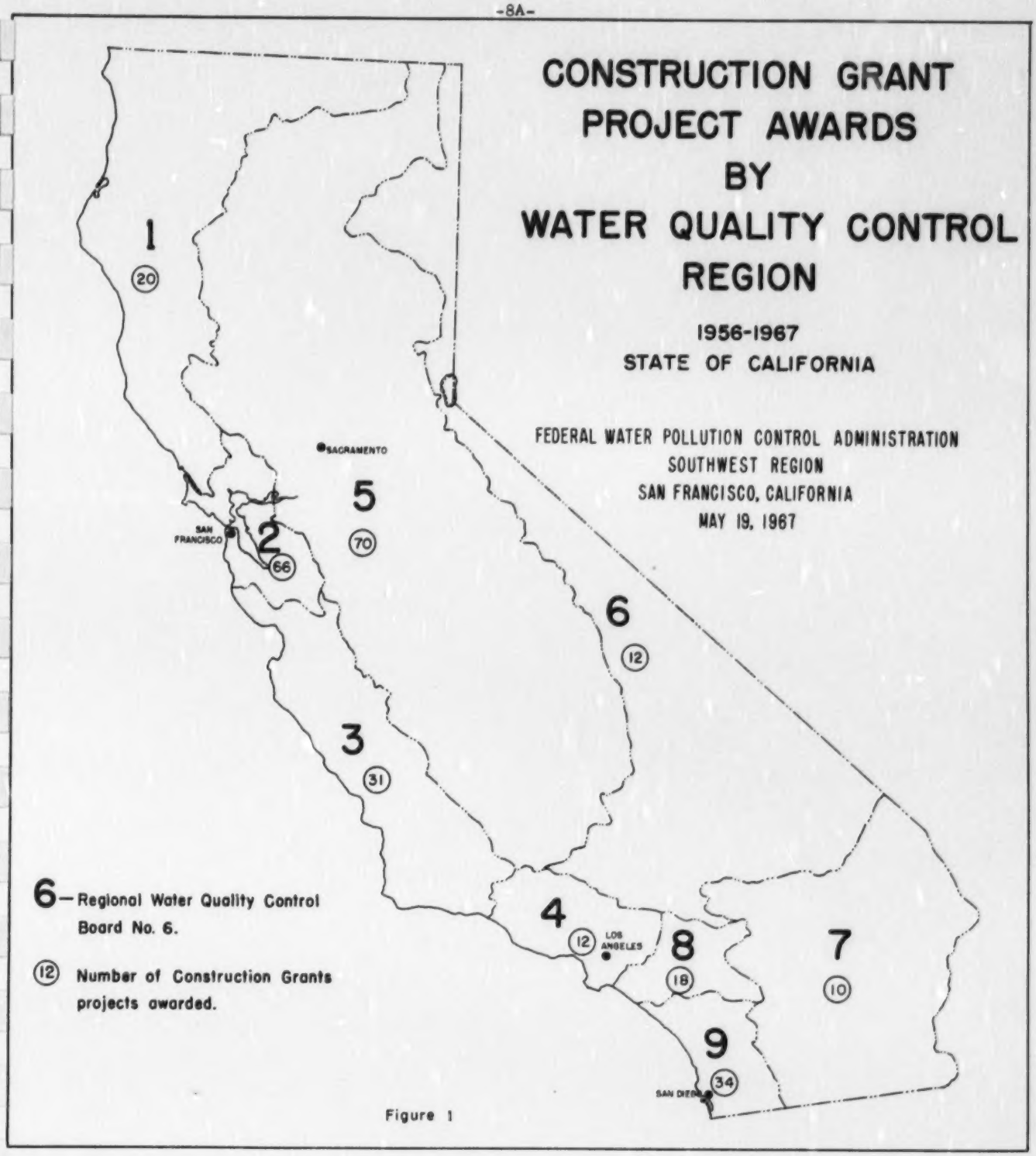
CONSTRUCTION GRANT
PROJECT AWARDS
BY
WATER QUALITY CONTROL
REGION
1956-1967
STATE OF CALIFORNIA
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
SOUTHWEST REGION
SAN FRANCISCO, CALIFORNIA
MAY 19, 1967
1
20
SACRAMENTO
SAN FRANCISCO
2
66
5
70
6
12
3
31
4
12
LOS ANGELES
8
18
7
10
9
34
SAN DIEGO
6— Regional Water Quality Control Board No. 6.
(12) Number of Construction Grants projects awarded.

Figure 1

S O U T H W E S T R E G I O N

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

TABLE 1

RECOMMENDED PRIORITIES FOR WASTE TREATMENT PROJECTS AT FEDERAL INSTALLATIONS

State of California

Installation and Project	Southwest Region Priority Recommendations	Priority Listings*	Current Status, May 1967
1. Installation: Hamilton Air Force Base Location : Novato, California Agency : Air Defense Command, USAF Project : Construct secondary treatment and chlorination facilities for existing treatment plant. Cost Est. : $422,000	First priority, FY 1967 projects	Priority 1, List B	Construction bids received and opened. Contract award scheduled for week of May 8, 1967.
2. Installation: Naval Air Station Location : Moffett Field, California Agency : 12th Naval District, USN Project : Construct connections to two adjacent civilian community sewage treatment plants. Cost Est. : $125,000	Fourth priority, FY 1968 projects	Priority 3, List A Priority 5, List B	Plans being designed for FY 1968 funding.
3. Installation: Naval Station Location : Treasure Island, California Agency : 12th Naval District, USN Project : Construct secondary treatment and chlorination facilities, and increase capacity of existing primary treatment plant. Cost Est. : $925,000	Fifth priority, FY 1968 projects	Priority 4, List A Priority 6, List B	Plans being designed for FY 1968 funding.

* List A: Southwest Region Project Priority List of Department of Defense Priority "B" Projects as Listed in Band I, FY 1968 "Priority of Treatment Needs for Federal Instllations," phoned into Washington Headquarters, FWPCA, October 17, 1966.

* List B: Southwest Region Project Priority List, "Highest Priority Pollution Abatement Requirements at Federal Installations," furnished for inclusion in listing of "Immediate Pollution Control Needs on Interstate Streams and Coastal Waters," as requested by Division of Comprehensive Programs, FWPCA, by memo, October 31, 1966.

RECOMMENDED PRIORITIES FOR WASTE TREATMENT PROJECTS AT FEDERAL INSTALLATIONS (CONT'D) TABLE 1

State of California

Installation and Project	Southwest Region Priority Recommendations	Priority Listings*	Current Status, May 1967
4. Installation: Mather Air Force Base Location : Sacramento, California Agency : Air Training Command, USAF Project : Construct complete industrial waste collection and treatment system. Cost Est. : $75,000	Sixth priority, FY 1968 projects	Priority 5, List A Priority 7, List B	Project referred to Hq. U.S. Air Force for scope and cost increase. Programmed project inadequate.
5. Installation: Naval Air Station Location : North Island, California Agency : 11th Naval District, USN Project : Construct industrial waste sewer connection to City of San Diego municipal system. Cost Est. : $24,000	Seventh priority, FY 1968 projects	Priority 6, List A Priority 8, List B	Plans being designed for FY 1968 funding.
6. Installation: Naval Shipyard Location : Long Beach, California Agency : 11th Naval District, USN Project : Replace existing deteriorated force main to sewage treatment plant. Cost Est. : $194,000	Eighth priority, FY 1968 projects	Priority 7, List A Priority 9, List B	Plans being designed for FY 1968 funding.
7. Installation: Mill Valley Air Force Station Location : Mill Valley, California Agency : Air Defense Command, USAF Project : Construct sand filters and additional sewage disposal facilities. Cost Est. : $36,000	Ninth priority, FY 1968 projects	Priority 8, List A Priority 10, List B	Plans being designed for FY 1968 funding.

RECOMMENDED PRIORITIES FOR WASTE TREATMENT PROJECTS AT FEDERAL INSTALLATIONS (CONT'D) TABLE 1

State of California

Installation and Project	Southwest Region Priority Recommendations	Priority Listings*	Current Status, May 1967
8. Installation: Almaden Air Force Station Location : New Almaden, California Agency : Air Defense Command, USAF Project : Provide secondary treatment and chlorination facilities, and construct additional ponds for disposal of effluent by evaporation and seepage. Cost Est. : $84,000	Tenth priority, FY 1968 projects	Priority 9, List A Priority 11, List B	Plans being designed for FY 1968 funding.
9. Installation: Hamilton Air Force Base Location : Novato, California Agency : Air Defense Command, USAF Project : Construct industrial waste collection and treatment system. Cost Est. : $150,000	Southwest Region had not been informed project was programmed until it was learned a predesign conference was to be held.	(Not previously listed)	Plans being designed for FY 1968 funding.
10. Installation: San Francisco Bay Naval Shipyard (Mare Island) Location : Vallejo, California Agency : 12th Naval District, USN Project : Construct industrial waste collection and treatment system; separate combined storm-sanitary collection system; and construct secondary treatment and chlorination facilities for the existing primary waste treatment plant. Cost Est. : $5,550,000	First priority, FY 1969 projects	(Not previously listed)	Accepted by Hq. Facilities Engineering Command, USN, for programming in FY 1969 for construction of industrial waste collection and treatment system, and for construction of secondary treatment and chlorination facilities for existing primary plant. Programming for separation of storm-sanitary collection system is postponed until FY 1970.

RECOMMENDED PRIORITIES FOR WASTE TREATMENT PROJECTS AT FEDERAL INSTALLATIONS (CONT'D) TABLE 1

State of California

Installation and Project	Southwest Region Priority Recommendations	Priority Listings*	Current Status, May 1967
11. Installation: Travis Air Force Base Location : Fairfield, California Agency : Military Airlift Command, USAF Project : Construct industrial waste collection and treatment system. Cost Est. : $650,000	Second priority, FY 1969 projects	(Not previously listed)	Submitted for FY 1969 funding.
12. Installation: Naval Weapons Station Location : Concord, California Agency : 12th Naval District, USN Project : Construct 5 new stabilization ponds, lift stations, force mains and appurtenances to preclude discharge of raw sewage into Suisun Bay. Cost Est. : $111,000	Fourth priority, FY 1969 projects	(Not previously listed)	Submitted for FY 1969 funding.
13. Installation: Pacific Missile Range Location : Point Mugu, California Agency : 11th Naval District, USN Project : Construct interceptor sewers, lift stations, and force mains to bring all installation sewage into existing secondary treatment plant and eliminate septic tank discharges to Mugu Lagoon. Cost Est. : $166,000	Fifth priority, FY 1969 projects	(Not previously listed)	Submitted for FY 1969 funding.

RECOMMENDED PRIORITIES FOR WASTE TREATMENT PROJECTS AT FEDERAL INSTALLATIONS (CONT'D) TABLE 1

State of California

Installation and Project	Southwest Region Priority Recommendations	Priority Listings*	Current Status, May 1967
14. Installation: Cambria Air Force Station Location : Cambria, California Agency : Air Defense Command, USAF Project : Construct interceptor sewer to collect operations sewage; construct secondary treatment plant to serve entire Station; eliminate discharge of septic tank effluent to Pacific Ocean. Cost Est. : $45,000	Sixth priority, FY 1969 projects	(Not previously listed)	Submitted for FY 1969 funding.
15. Installation: Klamath Air Force Station Location : Klamath, California Agency : Air Defense Command, USAF Project : Construct secondary treatment plant to eliminate discharge of septic tank effluent into Pacific Ocean. Cost Est. : $37,000	Seventh priority, FY 1969 projects	(Not previously listed)	Will be submitted for FY 1970 funding.
16. Installation: Mt. Laguna Air Force Station Location : Mt. Laguna, California Agency : Air Defense Command, USAF Project : Construct interceptor sewers to eliminate septic tank-tile fields in operations area, and construct secondary treatment plant to serve entire installation and eliminate discharge of septic tank effluent on ground surface. Cost Est. : $98,000	Ninth priority, FY 1969 projects	(Not previously listed)	Submitted for FY 1969 funding.

for erosion control on lands administered by the Bureau of Land Management as well as for activities under the jurisdiction of the Bureau of Public Roads and the U.S. Forest Service.

Section 6 of the Executive Order requires review and comments by the Federal Water Pollution Control Administration on the water resource projects of several Federal agencies. Federal Activities Coordination has established working procedures for incorporating water pollution control requirements into the plans and specifications of the project to cover activities during and after construction of recreational areas and contractor's facilities. Special provisions are recommended for minimizing the production and transport of silt and sediments in the watercourses of the project during construction.

IV. ENFORCEMENT PROGRAMS

The two interstate water pollution control enforcement actions in the Southwest Region that are of major interest to the State of California are those involving the Colorado River Basin (Figure 2) and the Lake Tahoe Basin (Figure 3). Both actions are being conducted under Section 10, PL 84-660, as amended. In addition, the Region is providing technical assistance to the United States Attorney in an action involving the Phillips Petroleum Company refinery at Avon, California.

COLORADO RIVER BASIN

A. The Conference on Pollution of the Interstate Waters of the Colorado River Basin and Its Tributaries (Figure 2) was initiated under authority of Section 8, of the Federal Water Pollution Control Act, (33 U.S.C., 466 et seq.) at the request of the States of Arizona, California, Colorado, Nevada, New Mexico and Utah. The Colorado River Basin Water Quality Control Project Study was undertaken within the Conference Program as a result of the unanimous recommendations made by the Conferees at the first sesion. The project objectives are:

1. To determine the location, magnitude, nature, and causes of interstate pollution of the Colorado River and its tributaries.

2. To determine and evaluate the nature and magnitude of the damages to water users caused by radioactivity, salinity, and other types of pollution.

3. To develop and evaluate methods for controlling or minimizing this pollution.

4. To recommend control or other measures justified by benefits, economic or otherwise, that will accrue from improved water quality.

The Project study serves as the technical arm of the Conference. Technical sessions with the State Conferees have served to support the study effort and to provide judgment and advice on pollution study needs, approaches and individual state policies.

The completion of the Project study, probably in early 1968, will be of importance to the State of California, as well as to the remainder of the Basin states, the Congress, the Administration and the water users who rely upon the water resources of the Colorado River and its tributaries. In addition to identifying the existing pollution sources and their effects, the report will evaluate the anticipated significance and impacts of future water quality changes that seem likely to occur as a result of continuing water resource development in the Basin. The evaluation will relate to future water resource developments including Federal projects already under construction, those approved for construction, as well as those authorized or proposed for investigation. Studies are being made of the economic significance of the anticipated water quality changes with respect to the use of Colorado River water in the southern California service area.

Also of importance to the State of California is the related study of salinity problems in the Colorado River Basin and the opportunities for salinity management and control.

B. The initial radiological pollution problems presented a hazard to downstream interests and created the need to provide for effective containment and treatment of radioactive milling wastes in the Upper Colorado River Basin (Figure 2). These problems have been resolved with the cooperation of the interested states and industries. The current radioactivity levels in surface waters of the Basin are well below the recommended limits of the Federal Radiation Council on radiological protection. A residual problem is the need to bring about the stabilization of the active and inactive uranium and thorium mill tailings piles in the Basin. A recent FWPCA report entitled "Disposition and Control of Uranium Mill Tailings Piles in the Colorado River Basin," makes specific recommendations for achieving the stabilization and gives estimates of costs for the remedial work. It is possible that a 6th Session of the Conference will be scheduled for this summer. The specific purpose of the Conference Session will be to resolve any remaining questions relative to the disposition and control of the tailings piles and to establish a definitive schedule for remedial

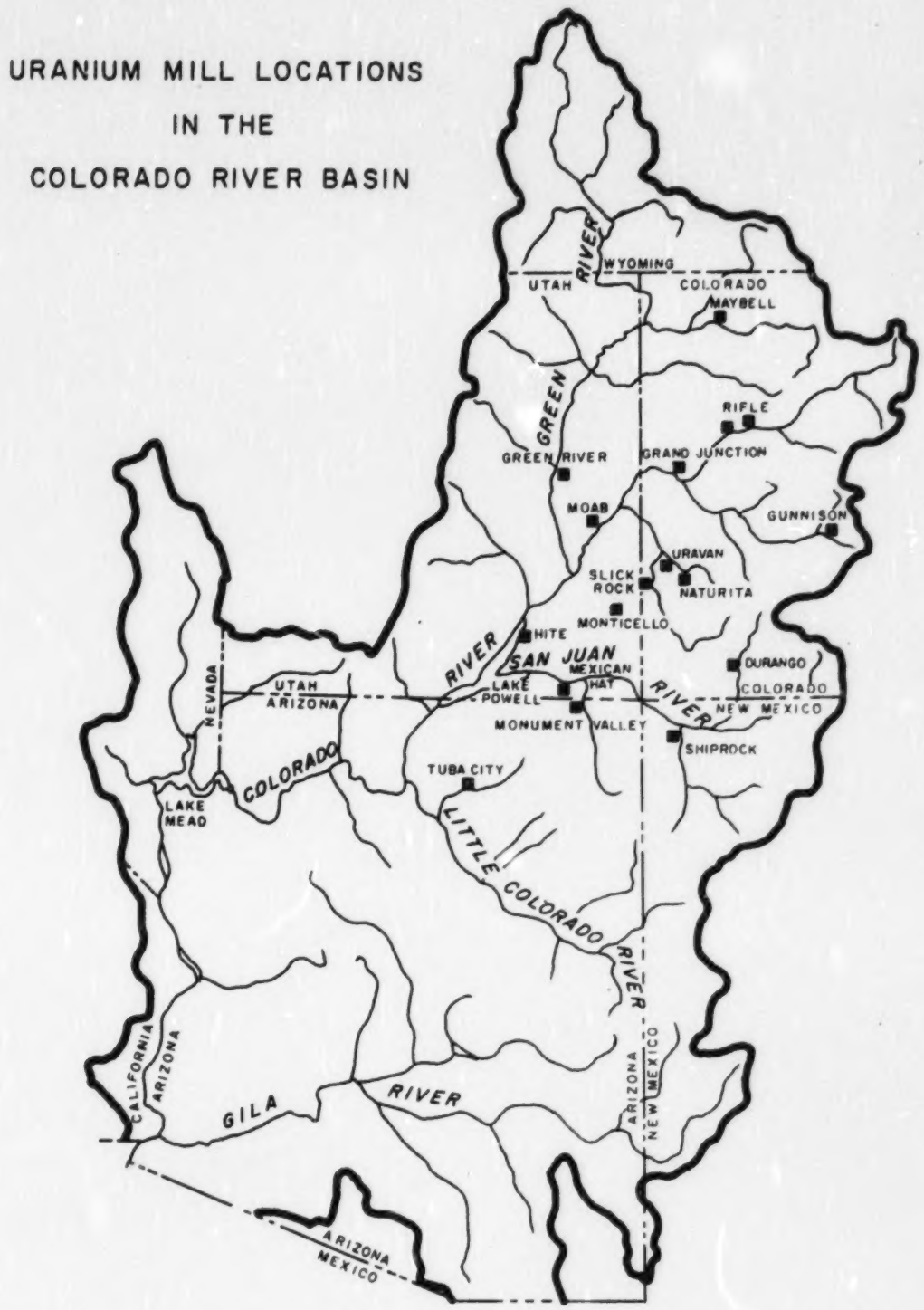
URANIUM MILL LOCATIONS
IN THE
COLORADO RIVER BASIN
GREEN RIVER
WYOMING
UTAH
COLORADO
MAYBELL
RIFLE
GREEN RIVER
GRAND JUNCTION
MOAB
GUNNISON
URAVAN
SLICK ROCK
NATURITA
MONTICELLO
WHITE MESA
SAN JUAN RIVER
MEXICAN HAT
DURANGO
COLORADO
NEW MEXICO
LAKE POWELL
UTAH
ARIZONA
NEVADA
MONUMENT VALLEY
SHIPROCK
COLORADO RIVER
TUBA CITY
LAKE MEAD
LITTLE COLORADO RIVER
CALIFORNIA
ARIZONA
GILA RIVER
ARIZONA
NEW MEXICO
ARIZONA
MEXICO

FIGURE 2

C. The establishment of water quality standards and the related plans of implementation for the interstate waters of the Colorado River Basin will require the continuation of State-Federal cooperative actions in the Basin. The Southwest Region is looking forward to supplementing the state efforts in the achievement of the water quality goals, making use of the Federal enforcement authority to the extent that it is needed.

LAKE TAHOE

The first session of the Conference in the Matter of Pollution of the Interstate Waters of Lake Tahoe and Its Tributaries (Figure 3) was held in July 1966, at the call of the Secretary of the Interior, under authority of Section 10 of the Federal Water Pollution Control Act. Reports, surveys and studies gave reason to believe that pollution of the interstate waters of Lake Tahoe and its tributaries was taking place and was subject toabatement under the Federal Act. Among the findings and recommendations resulting from the Conference are:

1. At the present time Lake Tahoe is not polluted nor contaminated.

2. There are recognizable long and short-term threats to pollution to both Lake Tahoe and the lands and waters of the entire Lake Tahoe Basin.

3. That a basinwide agency be established with adequate powers to prohibit development that would have an adverse effect on the quality of the waters of Lake Tahoe.

4. Sewage export from the Basin is to be achieved on a time schedule which is to be completed by 1970. The sewage shall receive a minimum of secondary treatment and the quality of the exported effluent shall not adversely affect beneficial uses of the waters of the area of export.

5. The construction of sewage export facilities is to be carried out as rapidly as possible, and that the Federal Government provide substantial financial assistance to solve the total waste disposal problems in recognition of the intense nationwide interest in Lake Tahoe as a unique natural asset.

LAKE TAHOE BASIN
CALIFORNIA - NEVADA

STATE OF CALIFORNIA
THE RESOURCES AGENCY
PREPARED BY
DEPARTMENT OF WATER RESOURCES

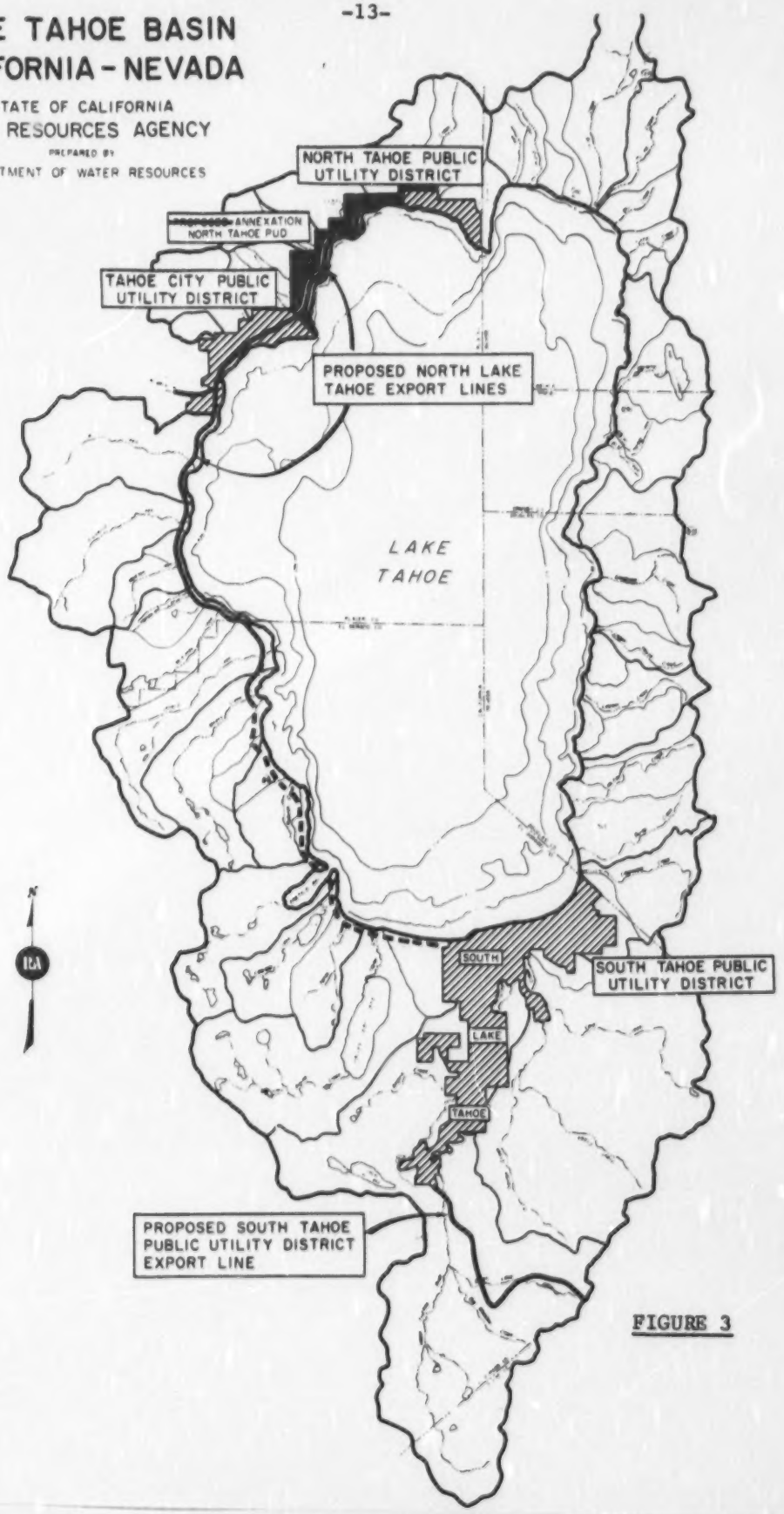

FIGURE 3

FWPCA is participating with the States of California and Nevada in a continuing surveillance program designed to adequately monitor the quality of Lake Tahoe and to detect any observable changes in the characteristics of the Lake waters.

A problem of immediate concern in the Lake Tahoe Basin is the prolonged discharge of sewage effluent into the Lake by the North Tahoe Public Utility District since early 1967. There is an acknowledged need for immediate major improvements to the District's facilities and every effort should be made to complete the necessary corrective measures this year. The District has been issued a Cease and Desist Order by the Lahontan Regional Water Quality Control Board, and the Placer County (California) Health Department is reported to have declared a moratorium on the issuance of building permits within the District.

PHILLIPS PETROLEUM COMPANY - AVON REFINERY

The Southwest Regional Office is providing technical services to the U.S. Attorney's Office, Department of Justice, in its pending action to enjoin the Phillips Petroleum Company from further pollution of the waters of Suisun Bay (Figure 4), an arm of San Francisco Bay, in violation of the Refuse Act of 1899, 33 U.S.C., Section 407. The action was taken by the United States Attorney in response to a discharge of refinery effluent into Suisun Bay in July 1965, and the consequent killing of an estimated 100,000 fish.

At the request of the U.S. Attorney, the Regional Office has recommended a series of quality criteria to be applied to the refinery effluent. The criteria have been reviewed in detail with the U.S. Attorney's staff, Phillips Petroleum Company representatives, representatives of Western Oil and Gas Association, and staff members of the San Francisco Bay Regional Water Quality Control Board. The Regional Board has issued tentative revisions to its earlier requirements setting quality limits on the Avon Refinery waste discharge. The Board's revised requirements are scheduled to be the subject of a public hearing in the near future. Phillips Petroleum Company is actively engaged in a major "in plant" construction program to improve the quality of the plant effluent and is conducting a significant self-monitoring effort. Any further action on the part of the U. S. Attorney's office and FWPCA is awaiting the action of the Regional Board in its adoption of the revised requirements.

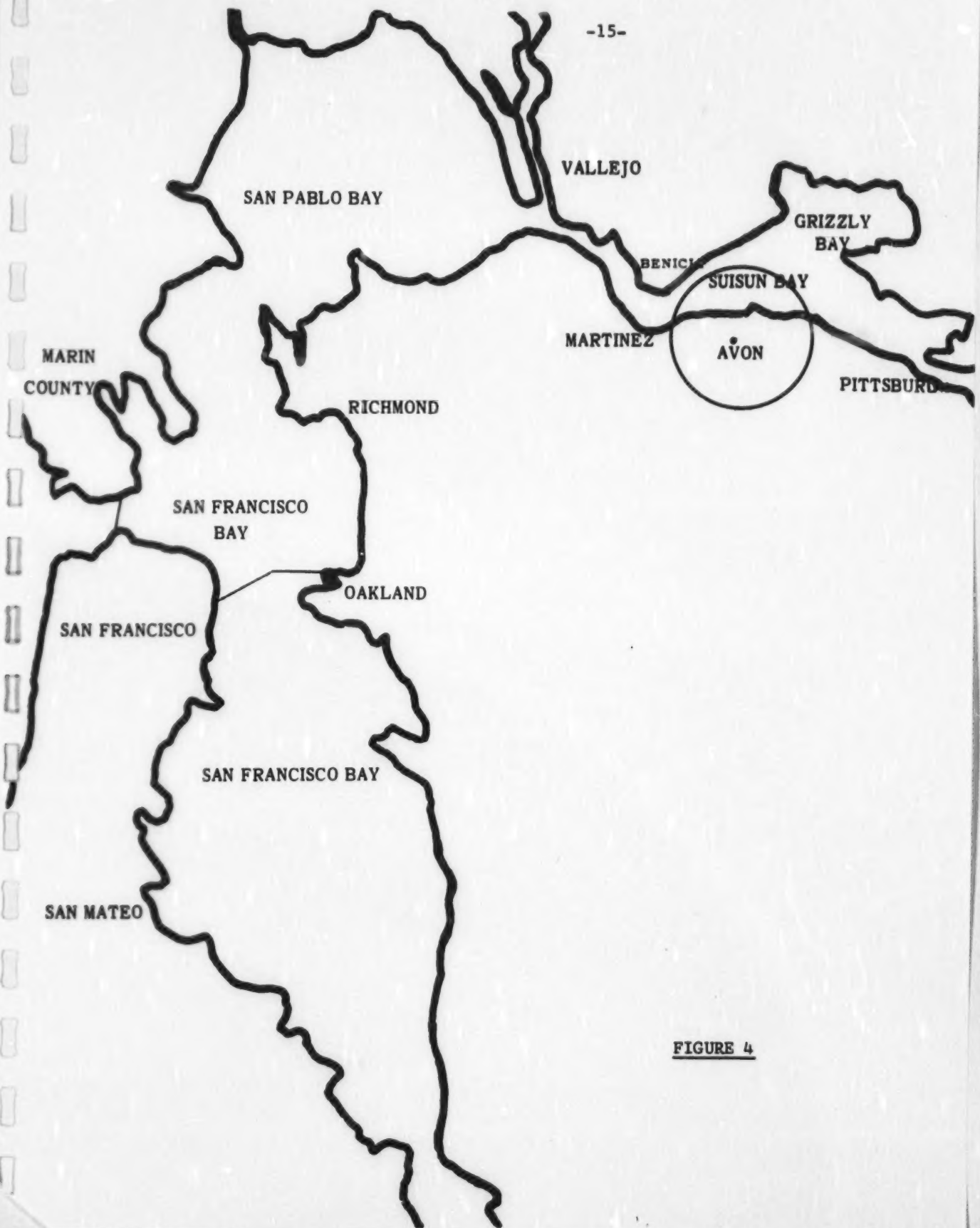
VALLEJO
SAN PABLO BAY
GRIZZLY BAY
SUISUN BAY
MARTINEZ
AVON
MARIN COUNTY
RICHMOND
SAN FRANCISCO BAY
OAKLAND
SAN FRANCISCO
SAN FRANCISCO BAY
SAN MATEO

FIGURE 4

Another accidental spill occurred between 3:30 a.m. and 6:30 a.m. on April 15, 1967, releasing a solution of potassium carbonate containing significant amounts of arsenious oxide. Approximately 8,100 pounds of arsenic was lost into the receiving waters of Suisun Bay. No reports of damage have been received.

TRUCKEE-CARSON RIVERS OPERATING CRITERIA COMMITTEE

In accordance with the Rules and Regulations (43 C.F.R., Part 418), issued by the Secretary of Interior, the Regional Director, Southwest Region, FWPCA, is a member of the Department of Interior Operating Criteria Committee for the Truckee and Carson Rivers. The Committee is to recommend operating criteria for the two river systems, with respect to the water rights of the United States, so as to comply with existing water-right decrees while maximizing the use of Carson River water by the Truckee-Carson Irrigation District and minimizing the District's diversion and use of Truckee Riverwater in order to make as much water as possible available to Pyramid Lake.

It will be necessary to compare the proposed operating criteria with the interstate water quality standards for both river systems in order to evaluate the compatibility of the two programs and their combined impact on current and anticipated waste disposal practices in each river basin. The Southwest Regional Office has initiated a program to accomplish the review and to evaluate the relationship to present and potential waste disposal practices.

V. RESEARCH AND DEVELOPMENT

California, with its serious water problems and its scientific and technological capabilities, has participated to a significant extent in the research and development programs of the Federal Water Pollution Control Administration.

The FWPCA grant programs under Section 5 and Section 6 of PL 84-660, as amended, provide support for several California, research, training, and demonstration grant programs. Expenditures during fiscal year 1966 total as follows:

Section 5 Grants

	No.	Amount
Research	30	$683,406
Training	4	150,036
Fellowships	17	112,394
Demonstration	9	540,444
	60	$1,486,280

Section 6 Grants

Combined Sewers	0	
Advanced Waste Treatment	7	$3,058,826
Industrial Wastes	1	29,300
	8	$3,088,126

In the first six months of fiscal year 1967 the Section 5 programs total $429,105 expended in California. Data for Section 6 programs could only come from the Research and Development Office in Washington since these grants have not been generated locally. A good share of all of the above is in Southern California.

Among its other important activities in California, FWPCA's Research and Development Program is participating with FWPCA's Technical Program in a joint FWPCA, U.S. Bureau of Reclamation, Office of Saline Water, California Department of Water Resources Project for the study and evaluation of alternative methods of removing nutrients, pesticides and salts from irrigation return flows. This project has been undertaken pursuant to the FWPCA study of the effects of the San Joaquin Valley Master Drain on water quality of the San Francisco Bay and Delta.

VI. WATER QUALITY STANDARDS

Water quality standards will soon be adopted by California for interstate and coastal waters in the State in accordance with the provisions of the Federal Water Quality Control Act of 1965. This has been a Herculean task for the State. But a task which from all indications the State will perform exceptionally well.

INTERSTATE WATERS

Table 2 is a list of the California interstate streams and coastal waters as identified (tentatively) by FWPCA. Table 3 lists the interstate streams and coastal streams for which the State Water Pollution Control Board has given notice of public hearings.

It is of interest to note that there is a difference of opinion between the Attorney General of California and the Office of the Solicitor, Department of the Interior, regarding the waters in California for which the State Water Quality Control Board has to consider the establishment of water quality standards to comply with provisions of the Federal Water Pollution Control Act, as amended. The Attorney General does not agree to the Solicitor's conclusion "...that 'coastal waters' within the meaning of the Act include waters of the sea within the territorial jurisdiction of the United States and all inland waters in which the tide ebbs and flows." San Francisco Bay is a case in point.

IMPLEMENTATION

Implementation of some of the water quality standards already adopted by the Regional Water Quality Control Boards will set a collision course with several local, State and Federal agencies. These situations will require that decisions be made on questions that have been troubling water users and water resource managers for years. A case in point, and one close at hand, is the Sacramento-San Joaquin Delta situation. Here, water quality is dependent upon the release of fresh water -- water for which there is strong competition for use elsewhere. Water quality standards will focus attention on the principal issues. A similar situation of conflicting water quality standards required for different uses is developing on the Colorado River.

Efforts and attention directed toward the establishment of meaningful water quality standards have brought into clear focus problems

long recognized but about which too little has been done. For example:

a. Eutrophication of lakes and reservoirs.
b. Pollution from commercial and naval ships.
c. Pollution from pleasure boats.
d. Long range and subtle ecological damage to our marine environment.

Meaningful water quality standards properly implemented -- and the importance of the state's plan of implementation cannot be over-emphasized -- will provide powerful tools that can be effectively used to maintain and enhance the quality of California's water resources.

TABLE 2

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
TENTATIVE IDENTIFICATION OF CALIFORNIA INTERSTATE AND COASTAL WATERS

Interstate and Coastal Waters

California

Name	Code
Alamo River	C-48
Bear River	C-8
Big River	C-11
Big Sur River	C-32
Bodega Bay	C-15
Bolinas Bay	C-17
Calaveras River	C-25
Carmel River	C-30
Colorado River	C-49
Eel River	C-6
Elliott Creek	C-2A
Garcia River	C-12
Goose Lake	C-3A
Grizzly Bay	C-21
Gualala River	C-13A
Humboldt Bay	C-5
Klamath River	C-2
Lake Tahoe	
Leviathan Creek	C-50
Little Sur River	C-31
Los Angeles & Ventura County Prisms	
Los Angeles River	C-37
Lost River	C-3
Mad River	C-4
Mattola River	C-7
Mokelumne River	C-24
Morro Bay	C-32A
Napa River	C-22
Navarro River	C-12
New River	C-47
Noyo River	C-10
Otay River	C-45
Pajaro River	C-28
Russian River	C-14
Sacramento River	C-23
Sacramento River Sources to Box Canyon Reservoir - Box Canyon to Lake Shasta	C
Salinas River	C-29
San Diego Bay	C-43
San Diego County and Southeast Orange County Coastal Lagoons	
San Diego River	C-42
San Diego River and Aqua Hedionda Lagoon	
San Francisco Bay	C-18
San Francisco Delta	
San Gabriel River	C-38
San Gabriel River to Drainage Divide - Muddy Canyon and Moro Canyon, Orange County	
San Gabriel Prism-San Gabriel River-Muddy Canyon and Moro Canyon, Orange County	
San Joaquin River	C-26
San Lorenzo River	C-27
San Luis Rey River	C-41
San Pablo Bay	C-19
Santa Ana River	C-39
Santa Clara River	C-36
Santa Margarita River	C-40
Santa Maria River	C-33
Santa Ynez River	C-34
Smith River	C-1
Suisun Bay	C-20
Sweetwater River	C-44
Tomales Bay	C-16
Ten Mile River	C-9
Tia Juana River	C-46
Ventura River	C-35

TABLE 2 (Continued)

Offshore Coastal Waters

Name	Code
Del Norte County	C-51
Humboldt County	C-52
Humboldt - Del Norte Coastal Waters	
Los Angeles County	C-62
Marin County	C-55
Mendocino County	C-53
Orange County	C-63
Pescadero Point to Mouth of Tomales Bay	
Pescadero - Pt. Sur	C-57
Point Piedras Blancas to Pescadero Creek	
Point Piedras Blancas to Pescadero Point	
Piedras Blancas - Pt. Arguello	C-59
Pt. Arguello - Rincon Pt.	C-60
Pt. Sur-Piedras Blancas	C-58
Rincon Point to San Gabriel River	
San Diego County	C-64
San Francisco County	C-56
Sonoma County	C-54
Ventura County	C-61

TABLE 3

SCHEDULE OF PUBLIC HEARINGS
ON
WATER QUALITY CONTROL POLICIES
FOR
INTERSTATE AND COASTAL WATERS OF CALIFORNIA
(March 9, 1967)

Name of Subject Water	Board Meeting Location	Date-1967
Klamath River	Sacramento	May 17
Mendocino County Coastal	Sacramento	May 17
Sonoma-Marin County Coastal	Sacramento	May 17
Humboldt-Del Norte County Coastal	San Francisco	June 14
Humboldt Bay	San Francisco	June 14
Tomales Bay	San Francisco	June 14
Smith River	San Francisco	June 14
Lost River	San Francisco	June 14
San Francisco Bay	San Francisco	June 14
San Francisco-Marin County Coastal	San Francisco	June 14
Pescadero Point to Point Piedros Blancas Coastal	Sacramento	May 17
Point Piedros Blancas to Point Arguello Coastal	Sacramento	May 17
Point Arguello to Rincon Point Coastal	Sacramento	May 17
Rincon Point to San Gabriel River Coastal	Los Angeles	May 18
Los Angeles and Ventura Counties Tidal Prisms, etc.	Los Angeles	May 18
San Gabriel River Tidal Prism	Los Angeles	May 18
Orange County Coastal	Los Angeles	May 18
San Diego Bay	Los Angeles	May 18
San Diego County Coastal	Los Angeles	May 18
Mission Bay (including San Diego River Tidal Prisms, etc.)	Los Angeles	May 18
Tijuana River	Los Angeles	May 18
Goose Lake	Sacramento	May 17
Sacramento-San Joaquin Delta	San Francisco	June 14

TABLE 3 (Contd)

Name of Subject Water	Board Meeting Location	Date-1967
Lake Tahoe	Sacramento	May 17
Truckee River	Sacramento	May 17
West Fork Carson River	Sacramento	May 17
East Fork Carson River	Sacramento	May 17
West Walker River (including Lake Topaz)	Sacramento	May 17
East Walker River	Sacramento	May 17
Colorado River	Los Angeles	May 18
New River	Los Angeles	May 18
Alamo River	Los Angeles	May 18

VII. SAN DIEGO BAY STUDY

The San Diego Bay Study (Figure 5) is a technical assistance project of the Pacific Northwest Water Laboratory, FWPCA to evaluate pollution caused by the operation of military and commercial ships and recreational boating, and to recommend corrective methods of waste treatment or disposal.

The Honorable James M. Quigley, then Assistant Secretary of Department of Health, Education, and Welfare, and Chairman of the President's Water Pollution Control Advisory Board, announced in a public meeting of the Board on April 22, 1966,that San Diego Bay had been designated as the site for a comprehensive study of the effect of untreated wastes from vessels on confined marine waters. Mr. Quigley's announcement followed long and cooperative effort on the part of the San Diego Regional Water Quality Control Board, a State agency, the U.S. Navy and local, State, and Federal health agencies, and interested City and County officials to bring the question of vessel waste to national attention and to point to San Diego Bay as an ideal laboratory for the study of vessel waste effects.

San Diego Bay is considered ideal for such a study because of completion in 1963 of a multimillion dollar interceptor sewer system and treatment facilities built by the City of San Diego for the metropolitan area. This facility, serving all surrounding communities, effectively removed from the Bay all domestic sewage discharges.

Other features that make the San Diego Bay ideal for such a study include almost complete lack of runoff from rainfall in the drainage basins surrounding the Bay, and the very successful program of the Regional Water Quality Control Board in securing the cooperation of industry in the removal from and/or treatment of industrial waste discharges in the Bay.

The purpose of the San Diego Bay Study is to evaluate the extent of pollution caused by the discharge of untreated wastes from vessels and to develop recommendations for any corrective action found necessary to eliminate the adverse effects of wastes originating on vessels.

This objective will be attained through comprehensive studies to establish the present condition of the waters of San Diego Bay, to determine the magnitude of waste loadings contributed by specific types and sizes of vessels operating in the Bay, and from the data so collected. to develop direction and scope for suitable corrective measures.

The San Diego Bay Study has been under way since the fall of 1966 and is expected to continue for a period of 18 months to two years. The President's Executive Order relating to pollution from Federal installations requires a progress report by January 1, 1967. Intensive efforts were made to initiate the San Diego Bay Study as early as possible in order to obtain some significant information for this progress report. This work has been completed and routine sampling surveys on the Bay are now continuing. Sampling work and correlated studies will be continued throughout the winter and spring months and more intensive studies carried out through the summary of 1967 when more recreational activities will be present in the Bay.

Upon completion of the work outlined, a report will be prepared detailing the findings of the study and recommending specific methods for the control of pollution from vessels.

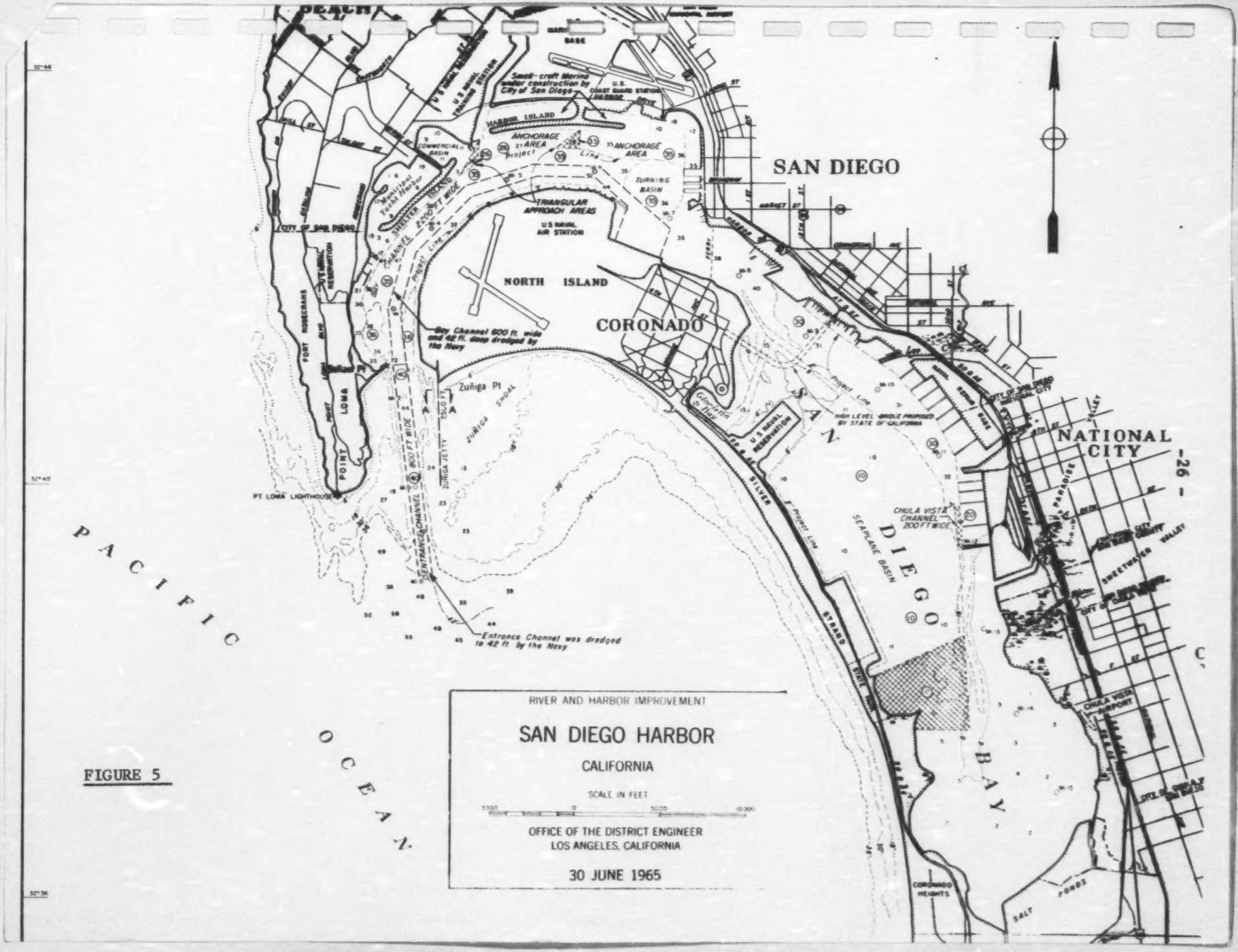
SAN DIEGO
CORONADO
NORTH ISLAND
HARBOR ISLAND
SHELTER ISLAND
NATIONAL CITY
CHULA VISTA
PACIFIC
OCEAN
SAN DIEGO BAY
PT LOMA LIGHTHOUSE
POINT LOMA
Zuñiga Pt
ZUÑIGA SHOAL
ZUÑIGA JETTY
ANCHORAGE AREA
TURNING BASIN
TRIANGULAR APPROACH AREAS
U.S. NAVAL AIR STATION
U.S. NAVAL RESERVATION
SEAPLANE BASIN
CHULA VISTA CHANNEL 200 FT WIDE
SHELTER ISLAND CHANNEL 400 FT WIDE
ENTRANCE CHANNEL 800 FT WIDE
Bay Channel 600 ft. wide and 42 ft. deep dredged by the Navy
Entrance Channel was dredged to 42 ft. by the Navy
HIGH LEVEL BRIDGE PROPOSED BY STATE OF CALIFORNIA
CORONADO HEIGHTS
SALT PONDS
RIVER AND HARBOR IMPROVEMENT
SAN DIEGO HARBOR
CALIFORNIA
SCALE IN FEET
OFFICE OF THE DISTRICT ENGINEER
LOS ANGELES, CALIFORNIA
30 JUNE 1965

FIGURE 5